

**REMARKS**

This paper is submitted in response to the Office Action dated August 11, 2003 in the above-identified application. Claims 1-5 are presently pending and subject to examination.

Claims 4 and 5 are objected to under 37 C.F.R. § 1.75(c) as being of improper dependent form for failing to further limit the subject matter of Claim 1, from which they depend. According to the Examiner, varying the slant angle of the apparatus of Claim 1 is a limitation regarding the use of the apparatus, and not its structure. In response, Applicant has amended the claims of the instant application so that Claims 1-5 are now drawn to a method of using the apparatus of the instant invention. Applicant contends that the amendments made to overcome this objection do not constitute the addition of new matter.

Claims 1-5 are rejected under 35 U.S.C. § 102(a) as being anticipated by WO99/03630 ("the '630 application"). According to the Examiner, the '630 application teaches an oscillating member with a conically-shaped head extending through a conically-shaped outlet orifice of a crucible holding molten material, the oscillation of said member serving to continuously vary the effective size of the orifice and hence the size of the droplets of molten material produced by the device. The Examiner asserts that the device depicted, in part, in Figure 3 of WO99/03630 is of substantially identical form as the apparatus of the instant invention and is operated in substantially the same manner, and thus is inherently able to operate in substantially the same manner with substantially

the same effect as the apparatus of the instant invention. In response, Applicant has amended Claims 1-5 to more distinctly and clearly claim the instant invention as a method of using the disclosed apparatus. Applicant asserts that support for the amendments to the claims presented herein may be found in the specification, *inter alia*, at page 2, line 19 through page 3, line 7, and in original Claim 1, and thus these amendments do not constitute the addition of new matter.

Applicant respectfully requests reconsideration of the above-identified application in light of the amendments and remarks presented in the instant Amendment.

**I. The Claims Are in Compliance with 37 C.F.R. §1.75**

Claims 4 and 5 are objected to under 37 C.F.R. § 1.75(c) as being of improper dependent form for failing to further limit the subject matter of Claim 1, from which they depend. The Examiner asserts that variations of the slant angle of the apparatus of Claim 1, as claimed in Claims 4 and 5, are merely limitations on the method of use of the apparatus, and not on its structure. Applicant disagrees with this assertion, because the slant angle of the apparatus is a critical feature of its composition and use not heretofore appreciated in the art. However, to further the prosecution of this case, Applicant herein amends Claims 1-5 so that they are now drawn to a method of using the apparatus of the instant invention, wherein the method comprises a step of varying the slant angle of the apparatus to yield drops of varying size. Support for these amendments may be found in the specification, *inter alia*, at page 2, line 19 through page 3, line 7. Applicant contends that the amendments made to overcome this objection do not constitute the addition of new matter.

**II. The Claims Are Not Anticipated**

Claims 1-3 have been rejected under 35 U.S.C. § 102(a) as anticipated by WO 99/03630 ("the '630 application"). The Examiner states that the '630 application teaches a crucible and oscillating member meeting the limitations of Claims 1-3. In response to Applicant's previous arguments, the Examiner asserts that the device depicted, in part, in Figure 3 of WO99/03630 is of substantially identical form as the apparatus of the instant invention and is operated in substantially the same manner. The Examiner concludes that the apparatus of the '630 application therefore is inherently able to operate in substantially the same manner with substantially the same effect as the apparatus of the instant invention.

Applicant continues to disagree with the Examiner's conclusion regarding the teachings of WO99/03630. The '630 application, on page 7, lines 14-23, clearly states that the effective flow area and hence drop size may be varied by partially inserting the conically-shaped head of the pintle into the outlet orifice of the crucible. While the head of this pintle is conically-shaped, and hence inherently possesses a slant angle, WO99/03630 does not teach nor suggest the variation of the slant angle as a means of altering drop size. Nor does oscillation of the head vary both the effective outlet diameter and the slant angle, as the Examiner has previously asserted on page 2 of Paper 8. The slant angle is a fixed feature of the head that is unchanged by the oscillatory movement of the pintle. WO99/03630 does not teach or suggest the significance of the slant angle on the effective outlet diameter and hence drop size, as is explicitly taught by Equation 2 on page 5 of the instant application.

In view of these significant differences between the teachings of the instant application and those of WO99/03630, and to obtain the earliest possible allowance of claims in this case, Applicant has amended Claims 1-5 to more distinctly and clearly claim the instant invention. Specifically, Claim 1 has been amended to encompass a method for manufacturing a three-dimensional object by deposition of molten material in drops of varying size, wherein said method comprises the steps of "varying the slant angle of the conically-shaped head of the oscillating member to form drops of molten material of varying size[.]" Because the '630 application neither teaches nor suggests altering the size of the drops of molten material by varying the slant angle of the pintle head, WO99/03630 simply cannot anticipate the amended claims of the instant application. Applicant asserts that support for the amendments to the claims presented herein may be found in the specification, *inter alia*, at page 2, line 19 through page 3, line 7, and thus these amendments do not constitute the addition of new matter.

Applicant respectfully requests, in view of the foregoing argument and amendments, that the rejection of Claims 1-5 under 35 U.S.C. 102(a) as anticipated by WO 99/03630 be withdrawn, and that these claims be allowed to issue.

### **CONCLUSION**

Applicant asserts that the claims, as presently amended, are in condition for allowance. A Notice of Allowance is earnestly solicited.

Applicant believes that a fee of \$475.00, representing the fee for a three-month extension of time for small entities under 37 C.F.R. §1.17(a)(3), is required for this filing. If this fee is deficient, the Commissioner is hereby authorized to charge any additional



A32795-PCT-USA (072448.0327)  
PATENT

fees required for this submission to Deposit Account No. 02-4377. Two copies of this communication are enclosed.

If a telephone interview would be of assistance in advancing the prosecution of the subject application, Applicants' undersigned attorney invites the Examiner to telephone at the number provided below.

BAKER BOTTS L.L.P.

By: Carmella L. Stephens  
Gary Butter  
Patent Office Reg. No. 33,841

Carmella L. Stephens  
Patent Office Reg. No. 41,328

Kimberly J. McGraw  
Patent Office Reg. No. 50,994

*Attorneys for Applicant*

30 Rockefeller Plaza  
44th Floor  
New York, NY 10112  
(212) 408-2500

FEB 24 2004

RECEIVED  
FEB 15 2004  
TC 1700